Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SIMPLE SCIENCE—COPPER.

Until within the last one hundred and seventy years copper mines have not been worked in the United Kingdoms. Before this period whenever the miners found any copper in the tin mines, which as they deepen usually produce it, it was thrown aside under the name of *poder*, no one at that time knowing how to reduce it to a metallic state. This fact shews of what importance it is to determine by analysis the nature of every subject that comes under the miners' observation, and proves that to chemical science alone we are indebted for the abundant supply of this valuable metal.

Copper was well known to the antients. Pliny says "the best mirrors were made with a mixture of copper and tin, and that they were so common as to be used even by the maid-servants." These metallic mirrors were generally made of two parts copper and one of tin. They were in much request amongst the antient nations, for the Egyptian women, whenever they went to their temples, carried one of them in their left hand. Copper was the only money used by the Romans until the 485th year of their city, when silver began to be coined. It is found in several parts of England, Ireland, and Wales, particularly in Cornwall, the mines of which county alone, produced in the years 1815, 1816, & 1817, 236,153 tons of ore, the value of which was £1,530,665. The ores of copper as sold at the mine, though some of them are richer, do not in some instances contain more than one-tenth of copper, frequently not one fifteenth, and some of them not one twentieth. As a proof of the great difference there is in the value of copper ores, it may be mentioned that there are many veins in Cornwall which seldom yield it of a greater price than four or five pounds per ton; and yet a few tons were lately sold from the united mines at one hundred pounds per ton; the general average is about eight pounds per ton. Anglesey yielded formerly more than twenty thousand tons of copper annually; the vein of metal was originally more than seventy feet thick. Native copper occurs occasionally in most of the mines, it is not often of a large size, though a mass has been found in a valley in the Brazils of 2666 pounds weight.

Copper is a very abundant metal, being found in Japan, China, Africa, and Siberia. It is very brilliant, of a red colour, and extremely nauseous to the taste. Being the most sonorous of the metals it is employed in making trumpets and other musical instruments; it combines elasticity with great strength, a wire of one-tenth of an inch in diameter being capable of supporting three hundred pounds weight; it is on account of these peculiar properties that rope-dancers make use of it. It will not burn so easily as iron, which is evident by its not striking fire by collision like iron, on this and other accounts, this metal has been substituted for iron in machinery which is employed in gunpowder mills. Its malleability is so great that it is hammered into leaves, and sold in paper books in imitation of gold leaf. This leaf copper is known under the name of Dutch metal, and is employed for covering ginger-bread and children's toys.

Copper is 8¾ times heavier than water. Sulphate of copper—that is sulphuric acid combined with copper is frequently found in the streams of water in copper mines. These waters were suffered to run to waste till an attention to chemical affinities, taught the proprietors how to turn them to good account. The quantity of copper they contain is not sufficient to reimburse the expense of boiling it down; but by throwing waste iron into this combination of sulphuric acid and copper, it becomes decomposed, or separated by the iron which has a great affinity for the acid, absorbing or combining with it and leaving the copper, which has less affinity for it, crusted on the outside. The water which issues from the mines in the county of Wicklow are so impregnated with this sulphate of copper, that one of the workmen having accidently left an iron shovel in this water; he found it some weeks after so encrusted with copper that he thought it was changed into that metal. The proprietors of the mines in pursuance of this hint, made proper receptacles for the water, and now find these streams of as much importance to them as the mines themselves. This combination is also found of very rich quality in the state of Connecticut. The stream destroys vegetation in its course, and when it settles in places near the spring, large lumps of metallic salt are collected. The practice of precipitating the metal by means of iron is also adopted here. The uses of this metal are too various to be enumerated. Besides its employment to make boilers and other vessels of capacity, and to sheath the bottoms of ships, it enters as a component part into several of the most valuable metallic alloys. The most important of these alloys is brass, which is formed by a union of copper and zinc.—Pinchbeck is made by alloying copper with a further portion of zinc. This last approach nearest to the colour of gold, and is sometimes called "*prince's metal.*" Bronzed and bell metal are both compositions of copper and tin. Copper is much used in the manufacture of domestic utensils, the necessity of keeping which always clean is generally acknowledged, because by long exposure to the atmospheric air, they in some measure become oxydized, in which case the surface will be covered with a green or blue crust, similar in appearance to verdigris, this crust is exceedingly poisonous, and Dr. Johnson gives an account of three men who died after excruciating sufferings, in consequence of eating some victuals prepared in an unclean copper on board the Cyclops frigate. Thirty-three other men became ill and were put upon the sick list at the same time, and from the same cause.

Another shocking case is related by Doctor Perceval, of a young lady, who amused herself eating samphire pickle impregnated with copper. "She soon complained of pain in the stomach," says he, "and in five or six days, vomiting commenced, which was incessant for two days, after this her stomach became prodigiously distended and in nine days after eating the pickle, death relieved her sufferings." It may not, however, be generally known that fat and oily substances, and vegetable acids, do not attack copper while HOT, and therefore if no liquor be ever suffered to grow COLD in copper vessels, these utensils may be used for every culinary purpose with perfect safety. French green, Brunswick green, verditer blue, mineral green, and verdigris, are also preparations of copper, which thus furnishes many requisites to the painter, paper-stainer, and dyer.

E. B.

TO TAKE THE HONEY FROM BEES WITHOUT DESTROYING THEM.

The following easy method of taking the honey without destroying the bees, is generally practised in France. In the dusk of the evening, when the bees are quietly lodged, approach the hive and turn it gently over. Having steadily placed it in a small pit, previously dug to receive it, with its bottom upwards, cover it with a clean new hive, which has been properly prepared, with a few sticks across the inside of it, and rubbed with aromatic herbs. Having carefully adjusted the mouth of each hive to the other, so that no aperture remains between them, take a small stick and beat gently around the sides of the lower hive for about ten minutes or a quarter of an hour, in which time the bees will leave their cells in the lower hive, ascend, and adhere to the upper one. Then gently lift the new hive, with all its little tenants, and place it on the stand from which the other hive was taken. This should be done some time in the week preceding midsummer-day, that the bees may have time, before the summer flowers are faded, to lay in a new stock of honey, which they will not fail to do for their subsistence during the winter.

HOW TO MAKE AN INFALLIBE CORN PLASTER.

Mr. Cooper, in his valuable Dictionary of Surgery, gives the following recipe as infallible for the cure:

Take two ounces of gum ammoniac;
—— Two ounces of yellow wax;
——Six dramchs of verdigris:

Melt them together, and spread the composition on a piece of soft leather, or linen; cut away as much of the corn as you can with a knife, before you apply the plaster, which must be renewed in a fortnight, if the corn is not by that time gone.